

Programme Structure and Course Details of MDS in Pediatric & Preventive Dentistry 2022



M S Ramaiah University of Applied Sciences

**Programme Structure and Course Details Of
Master Dental Surgery
In
Pediatric and Preventive Dentistry
Batch 2022 onwards**

M S Ramaiah University of Applied Sciences

Faculty of Dental Sciences



Approved by the Academic Council at its 26th meeting held on 14th July 2022

Yashraj

Dean, Academics

M.S. Ramaiah University of Applied Sciences
Bangalore

Registrar
M.S. Ramaiah University of Applied Sciences
Bangalore

University's Vision, Mission and Objectives

The M. S. Ramaiah University of Applied Sciences (MSRUAS) will focus on student-centric professional education and motivates its staff and students to contribute significantly to the growth of technology, science, economy and society through their imaginative, creative and innovative pursuits. Hence, the University has articulated the following vision and objectives.

Vision

MSRUAS aspires to be the premier university of choice in Asia for student centric professional education and services with a strong focus on applied research whilst maintaining the highest academic and ethical standards in a creative and innovative environment

Mission

Our purpose is the creation and dissemination of knowledge. We are committed to creativity, innovation and excellence in our teaching and research. We value integrity, quality and teamwork in all our endeavors. We inspire critical thinking, personal development and a passion for lifelong learning. We serve the technical, scientific and economic needs of our Society.

Objectives

1. To disseminate knowledge and skills through instructions, teaching, training, seminars, workshops and symposia in Engineering and Technology, Art and Design, Management and Commerce, Health and Allied Sciences, Physical and Life Sciences, Arts, Humanities and Social Sciences to equip students and scholars to meet the needs of industries, business and society
2. To generate knowledge through research in Engineering and Technology, Art and Design, Management and Commerce, Health and Allied Sciences, Physical and Life Sciences, Arts, Humanities and Social Sciences to meet the challenges that arise in industry, business and society
3. To promote health, human well-being and provide holistic healthcare
4. To provide technical and scientific solutions to real life problems posed by industry, business and society in Engineering and Technology, Art and Design, Management and Commerce, Health and Allied Sciences, Physical and Life Sciences, Arts, Humanities and Social Sciences
5. To instill the spirit of entrepreneurship in our youth to help create more career opportunities in the society by incubating and nurturing technology product ideas and supporting technology backed business
6. To identify and nurture leadership skills in students and help in the development of our future leaders to enrich the society we live in
7. To develop partnership with universities, industries, businesses, research establishments, NGOs, international organizations, governmental organizations in India and abroad to enrich the experiences of faculties and students through research and developmental programmes



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Programme Specifications: MDS in Pediatric and Preventive Dentistry

Faculty	Dental Sciences
Department	Pediatric and Preventive Dentistry
Programme Code	072
Programme Name	MDS in Pediatric and Preventive Dentistry
Dean of the Faculty	Dr. Silju Mathew
Head of the Department	Dr. Dhananjaya. G

1. Title of the Award: MDS in Pediatric and Preventive Dentistry
2. Mode of Study: Full-Time
3. Awarding Institution /Body: M. S. Ramaiah University of Applied Sciences, Bengaluru
4. Joint Award: Not Applicable
5. Teaching Institution: Faculty of Dental Sciences, M. S. Ramaiah University of Applied Sciences, Bengaluru
6. Date of Programme Specifications: July 2022
7. Date of Programme Approval by the Academic Council of MSRUEAS: July - 2022
8. Next Review Date: July 2025
9. Programme Approving Regulating Body and Date of Approval:
10. Programme Accredited Body and Date of Accreditation:
11. Grade Awarded by the Accreditation Body:
12. Programme Accreditation Validity:
13. Programme Benchmark:
14. Rationale for the Programme

Oral diseases especially dental caries is a significant health problem among children that can affect general health of the child. Infancy and childhood represent a growing phase with constant change that requires specialized training to provide comprehensive oral care. In the Indian scenario, often oral health is the most neglected aspect of health care with prevalence of dental diseases crossing more 40-50% of the children. The proportion assumes greater importance especially in rural sector due to multiple barriers including lack of awareness, access to dental care or unaffordability.

According to American Academy of pediatric dentistry, Pedodontics and Preventive dentistry is an age-defined specialty that provides primary and comprehensive, preventive and therapeutic oral health care for infants and children through adolescence including those with special health care needs. The definitions implies that the pedodontist is primarily involved in the oral health care of infants and children and therefore has to be contributory to scientific research that can alleviate the oral health problems. It is also a very professionally satisfying



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experience to bring about positive oral health behavior in children that will enrich the professional learning.

Considering that the children constitute a major chunk of population and that at present we have dearth of pedodontist in the country, it is imperative to train more specialists to address the oral health care needs of the children.

15. Programme Mission

Master's degree programme in Pediatric and Preventive Dentistry is designed to impart training in clinical diagnosis and management of oral health problems in infants, children through adolescence including children with special health care needs. Postgraduates are expected to possess advanced knowledge and understanding in all facets of Pedodontics and preventive dentistry; high order skills in analysis, critical evaluation and diagnosis, professional clinical application; and the ability to solve complex oral health problems in children and those with special health care needs and think rigorously and independently. The postgraduates are expected to meet the human resources requirements in the area of Pedodontics and also a few them may take the path of oral health research for future, a few them may prefer to be in academics while few may take up to exclusive clinical practice.

16. Graduate Attributes (GAs)

- GA-1. Oral health knowledge:** Ability to apply knowledge of basic and applied medical and dental science to address oral health issues.
- GA-2. Problem Analysis:** Ability to analyse oral health problems, interpret data and arrive at meaningful conclusions involving appropriate investigations and diagnosis.
- GA-3. Provide Solutions:** Ability to understand the etiopathology, clinical features of oral disease and provide solutions considering public health and safety, and the cultural, societal, and environmental considerations
- GA-4. Conduct Investigations of Complex Problems:** Ability to understand and solve complex clinical situations by conducting experimental investigations
- GA-5. Modern Tool Usage:** Ability to apply appropriate tools and techniques and understand utilization of resources appropriately to oral health activities
- GA-6. The Dental Expert and Society:** Ability to understand the effect of oral health solutions on legal, cultural, social, and public health and safety aspects
- GA-7. Environment and Sustainability:** Ability to develop sustainable solutions and understand their effect on society and environment
- GA-8. Ethics:** Ability to apply ethical principles to dental practices and professional responsibilities
- GA-9. Individual and Teamwork:** Ability to work as a member of a team, to plan and to integrate knowledge of various dental and allied disciplines and to lead teams in multidisciplinary settings



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- GA-10. Communication:** Ability to make effective oral presentations and communicate technical ideas to a broad audience using written and oral means
- GA-11. Project Management and Finance:** Ability to lead and manage multidisciplinary teams by applying financial principles for practice management.
- GA-12. Life-long learning:** Ability to adapt to the changes and advancements in technology and engage in independent and life-long learning

17. Programme Outcomes (POs)

MDS in Pediatric and Preventive Dentistry graduates will be able to:

- PO1.** Impart knowledge on growth and development of stomatognathic system as well overall aspects of the child
- PO2.** Enhance the understanding of the common oral diseases affecting the teeth and the supporting tissues of children through adolescence including the etiology, clinical manifestations and differential diagnosis
- PO3.** Evaluate treatment options and deliver it with most efficient manner based on evidence based dentistry
- PO4.** Analyze the behavior of the children both in the clinical setup and otherwise to inculcate good dental behavior
- PO5.** Impart training on instruments and techniques for various procedures for oral rehabilitation
- PO6.** Provide a general perspective and opportunities for a career in pediatric dentistry

18. Programme Goal

The programme goal is to produce graduates having critical, analytical and problem-solving skills, and ability to think independently, and to pursue a career in Pediatric and Preventive dentistry

19. Program Educational Objectives (PEOs)

The objectives of MDS in Pediatric and Preventive Dentistry Programme are to:

- PEO-1.** Provide students with a strong foundation in basic and applied medical and dental sciences to address oral health issues to enable them to devise and deliver efficient solutions to challenging problems pertaining to oral and maxillofacial region in infants and children through adolescence including those with special health care needs
- PEO-2.** Impart analytic and cognitive skills required to develop innovative solutions for R&D, Industry, and societal requirements as related to pediatric dentistry
- PEO-3.** Provide sound theoretical and practical knowledge of oral health sciences, managerial and entrepreneurial skills to enable students to contribute to the well-being and welfare of the society



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PEO-4. Inculcate strong human values and social, interpersonal and leadership skills required for professional success in evolving global professional environments

20. Programme Specific Outcomes (PSOs)

At the end of the MDS in Pediatric and Preventive Dentistry programme, the graduates will be able to:

- PSO-1. Diagnose and explain clinical manifestations of common oral diseases affecting teeth and supporting tissues of children through adolescence including those with special health care needs
- PSO-2. Justify the best treatment option and deliver it in the most efficient manner based on evidence-based dentistry
- PSO-3. Analyze the behaviour of children both in clinical setup and otherwise, to inculcate positive dental attitude
- PSO-4. Deliver effective comprehensive, preventive and therapeutic paediatric dental treatment

21. Programme Structure:

Year 1							
Sl. No.	Code	Course Title	Theory (H/W/Y)	Tutorials (H/W/Y)	Practical (H/W/Y)	Total Credits	Max. Marks
1	PEC501A	Preclinical and Clinical Phase Basics	5	0	29	48	400
2	MF501A	Clinical Photography*	-	-	1	1	20
3	MF502A	Basic and Advanced Life Support*	-	-	1	1	20
4	MF503A	Personality Development and Soft Skills*	-	-	1	1	20
5	MF504A	Law for Dental Professionals*	-	-	1	1	20
6	MR501A	Research Methodology	1	-	1	2	40
7	MR504A	Dissertation	-	1	-	2	-
8		Part I - Programme End Examination	-	-	-	-	100
Total			6	1	34	56	620
Total number of contact hours per week			36				

*Faculty Common Modules are conducted for 30 hours as 1 credit modules

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Year 2							
Sl. No.	Code	Course Title	Theory (H/W/Y)	Tutorials (H/W/Y)	Practical (H/W/Y)	Total Credits	Max. Marks
1	PEC502A	Clinical Phase Intermediate	5	0	28	48	400
2	MR502A	Short Term Project/Group Project	-	-	1	6	100
3	MR503A	Library Dissertation	-	1	-	4	60
4	MR504A	Dissertation	-	1	3	10	
5	MR505A	Conference Presentation	-	1	-	1	20
6	MF505A	Teacher Training Module	1	-	-	1	20
7	MG501A	Training in any other institution in India or Abroad	1	-	-	3	60
Total			7	3	31	73	660
Total number of contact hours per week			36				

Year 3							
Sl. No.	Code	Course Title	Theory (H/W/Y)	Tutorials (H/W/Y)	Practical (H/W/Y)	Total Credits	Max. Marks
1	PEC503A	Clinical Phase Advanced	3	0	33	24	400
2	MR504A	Dissertation	-	2	2	6	200
3	MR506A	Journal Publication	-	1	-	1	20
4		Part II - Programme End Examination	-	-	-	20	600
Total			3	3	35	51	1220
Total number of contact hours per week			36				

22. Course Delivery:

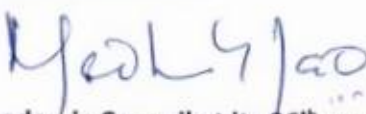
The course is delivered Monday to Saturday of the week according to timetable including mandated library/laboratory time towards self-directed learning.

23. Teaching and Learning Methods

- a. Team Teaching/ Integrated Teaching
- b. Face to Face Lectures using Audio-Visuals
- c. Seminars/journal clubs/e-lectures
- d. Case Based Discussions
- e. Group Discussions, Debates, Presentations
- f. Demonstrations on videos, computers and models
- g. Clinical based learning
- h. Hospital based learning
- i. Laboratory work
- j. Dissertation/ Group Project work
- k. School visits/Outreach center visits


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- l. Interdepartmental meets
- m. Continuing dental education programs/symposiums/workshops
- n. State/National/International conferences and conventions

24. Assessment and Grading

24.1. Components of Grading

Programme Specialization Teaching Course (PSTC) 1 - 3

There are two components-

a. Component 1 (Continuous Evaluation)

Year 1:

There are 2 components

i. Theory component consisting of

- a. Assignment to be submitted as a word processed document for 100 marks consisting of Section A and Section B
- b. Assessment as a Mock written examination for Part 1 of Component 2 for 100 marks consisting of Section A and Section B

ii. Clinical component consisting of

Two clinical case discussion/clinical examination (80 marks each) along with Viva Voce (20 marks each) on the course content

Year 2:

There are 2 components

iii. Theory component consisting of

- a. Assignment to be submitted as a word processed document for 100 marks consisting of Section A and Section B
- b. Assessment as a written examination for 100 marks consisting of Section A and Section B

iv. Clinical component consisting of

Two clinical case discussion/clinical examination (80 marks each) along with Viva Voce (20 marks each) on the course content

Year 3:

There are 2 components

v. Theory component consisting of

- a. Assignment to be submitted as a word processed document for 100 marks consisting of Section A and Section B
- b. Assessment as a Mock written examination for Part 2 of Component 2 for 300 marks

vi. Clinical component consisting of

- a. Clinical case discussion/clinical examination (80 marks) along with Viva Voce (20 marks) on the course content
- b. Assessment as a Mock Clinical examination for Part 2 of Component 2 for 300 marks

b. Component 2 (Programme End Exam PEE),

Component 2 shall have a theory component, Clinical Component, Pedagogy and Viva Voce

Theory component

Written examination shall consist of Basic Sciences (Part-I) of three hours duration shall be conducted at the end of First year of MDS course. Part-II Examination shall be conducted at





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the end of Third year of MDS course. Part-II Examination shall consist of Paper-I, Paper-II and Paper-III, each of three hours duration. Paper-I & Paper-II shall consist of two long answer questions carrying 25 marks each and five questions carrying 10 marks each. Paper-III will be on Essays. In Paper-III three Questions will be given and student has to answer any two questions. Each question carries 50 marks. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows:

Part-I

Paper-I : Applied Basic Sciences : Applied Anatomy, Physiology, and Biochemistry, Pathology, Microbiology, Pharmacology, Research Methodology and Biostatistics Growth and Development and Dental plaque, Genetics

Part-II

Paper-I: Clinical Pedodontics

Paper-II: Preventive and Community Dentistry as applied to Pediatric dentistry

Paper-III: Descriptive and analysis type question

Clinical Component

Structured clinical exam for different exercises will be assessed for 200 marks.

- i. Case discussion and performing a pediatric restorative therapy – 70 mark
- ii. Case discussion and performing of pediatric endodontic therapy – 70 marks
- iii. Case discussion and performance of preventive/interceptive orthodontics – 60 marks

Pedagogy and Viva voce Component

Structured Viva Voce exam for 80 marks and pedagogy for 20 marks will be conducted during clinical exam.

Research, Faculty Common, Elective modules:

These modules will be assessed as per the assessment norms as specified in the module specification. The assessment for these modules is through tests, presentations or any other method as specified in the module specification.

25. Student Support for Learning

1. Course Notes
2. Reference Books in the Library
3. Magazines and Journals
4. Internet Facility
5. Computing Facility
6. Laboratory Facility
7. Workshop Facility
8. Staff Support
9. Lounges for Discussions
10. Any other support that enhances their learning

26. Quality Control Measures

1. Review of Course Notes
2. Review of Question Papers and Assignment Questions
- Student Feedback



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4. Moderation of Assessed Work
5. Opportunities for students to PEE their assessed work
6. Review by external examiners and external examiners reports
7. Staff Student Consultative Committee meetings
8. Student exit feedback
9. Subject Assessment Board (SAB)
10. Programme Assessment Board (PAB)

27. Programme Map (Course-PO-PSO Map)

Year	Course Title	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
1	Preclinical and Clinical Phase Basics	3	3	3	3	3	3	3	3	3	3
1	Clinical Photography*		1	1				1			
1	Basic and Advanced Life Support*						1		1		2
1	Personality Development and Soft Skills*						3			2	2
1	Law for Dental Professionals*				1		1		1	1	
1	Research Methodology			3					3		3
2	Clinical Phase Intermediate	3	3	3	3	3	3	3	3	3	3
2	Short term project/Group project			3					3		3
2	Library Dissertation			3					3		3
2	Conference presentation			3					3		3
2	Teacher Training Module						2			2	
2	Training in any other institution in India or Abroad	1	3	3	3	3	3	1	1	1	1
3	Clinical Phase Advanced	2	3	3	3	3	3	3	3	3	3
3	Dissertation			3					3		3
3	Journal Publication			3					3		3
3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution											

28. Co-curricular Activities

Students are encouraged to take part in co-curricular activities like seminars, conferences, symposia, paper writing, attending industry exhibitions, project competitions and related activities for enhancing their knowledge and networking.

29. Cultural and Literary Activities

Annual cultural festivals are held to showcase the creative talents in students. They are involved in planning and organizing the activities.

30. Sports and Athletics

Students are encouraged to take part in sports and athletic events regularly. Annual sports meet will be held to demonstrate sportsmanship and competitive spirit.



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Course Specifications

Module Title	Preclinical and Clinical Phase Basics
Module Code	PEC501A
Module Type	Program Specialization Teaching Course
Department	Pediatric and Preventive Dentistry
Faculty	Dental Sciences

1. Course summary

This module is designed to hone the skills of the student for restoration, endodontic therapy and orthodontic appliances in the preclinical setup while reviewing basic sciences. The students will be able to prepare cavities on artificial teeth for various carious situations and restore it with appropriate dental materials using modified techniques. The students will also be trained to perform endodontic procedure on extracted primary and permanent teeth and obturate. The students will fabricate various orthodontic appliances for different clinical situation on models. Apart from these, the students will also review basic concepts of tooth morphology and basic sciences, perform radiographic techniques and interpretation. This module also enables the student to treat the pediatric patient as far as clinical diagnosis and management both in terms of behavior as well as clinical work. The student will be able to relate to the basic concepts of child psychology and application of basic behavior management techniques. The student will also be able to evaluate the clinical scenario, diagnose and provide comprehensive treatment options that are effective and efficient. The student will be able to assess the caries risk and provide comprehensive treatment.

2. Course size and credits:

Number of Credits	56
Credit Structure (Lecture: Tutorial: Practical)	16:0:32
Total Hours of Interaction	1800
Number of Weeks in a Year	50
Department Responsible	Pediatric and Preventive Dentistry
Total Course Marks	400
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this Module, the student will be able to:

- CO-1. Apply basic medical sciences including genetics and molecular biology with emphasis to pediatric dentistry
- CO-2. Perform preclinical procedures on wax blocks, typhodont and extracted teeth
- CO-3. Fabricate orthodontic appliances on study models
- CO-4. Interpret intraoral and extra oral radiographic techniques including cephalometric tracing
- CO-5. Plan preventive and therapeutic approaches based on caries risk assessment tools.
- CO-6. Perform basic clinical procedures using non pharmacological behavior management approaches



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4. Course Contents

Theory

Unit 1: Applied Anatomy & genetics and Embryology - Gross Anatomy, anatomy of Head & Neck in detail -Cranial and facial bones, TMJ and function, muscles of mastication and facial expression, muscles of neck. and chain of back muscles including muscles of deglutition and tongue, arterial supply and venous drainage of the head and neck, anatomy of the Para nasal sinuses with relation to the Vth cranial nerve - General consideration of the structure and function of the brain, considerations of V, VII, XI, XII, cranial nerves and autonomic nervous system of the and neck - Salivary glands, Pharynx, Larynx Trachea, Esophagus, Functional Anatomy mastication, Deglutition, speech, respiration, and circulation, teeth eruption, morphology, elusion and function - Anatomy of TMJ, its movements and myofacial pain dysfunction syndrome. Development of the face, tongue, jaws, TMJ, Paranasal sinuses, pharynx, larynx, trachea, esophagus, Salivary glands, Development of oral and Para oral tissue including detailed aspects of tooth and dental hard tissue formation. Prenatal and postnatal development of cranium, face, jaws, teeth and supporting structures - Chronology of dental development and development of occlusion - Dimensional changes in dental arches - Cephalometric evaluation of growth.

Unit 2: Dental Anatomy and Histology - Anatomy of primary and secondary dentition, concept of occlusion, mechanism of articulation, and masticatory function. Detailed structural and functional study of the oral, dental and paraoral tissues. Normal occlusion, development of occlusion in deciduous mixed and permanent dentitions, root length, root configuration, tooth-numbering system. Histology and biological considerations of enamel, dentin, cementum, periodontal ligament and alveolar bone, pulpal anatomy, histology and biological consideration. Salivary glands and Histology of epithelial tissues including glands. Histology of general and specific connective tissue including bone, hematopietic system, lymphoid etc. Muscle and neural tissues Endocrinal system including thyroid Salivary glands, Histology of skin, oral mucosa, respiratory mucosa, connective tissue, bone, cartilage, cellular elements of blood vessels, blood, lymphatic, nerves, muscles, tongue, tooth and its surrounding structures.

Unit 3: Cell Biology, Pathology and Microbiology - Detailed study of the structure and function of the mammalian cell with special emphasis on ultra-structural features and molecular aspects. Detailed consideration of Intercellular junctions. Cell cycle and division, cell-to-cell and cell- extra cellular matrix interactions. Inflammation, repair and degeneration, Necrosis and gangrene, Circulatory disturbances, Ischemia, hyperemia, chronic venous congestion, edema, thrombosis, embolism and infarction. Infection and infective granulomas, Allergy and hypersensitive reaction, Neoplasm; Classification of tumors, Carcinogenesis, characteristics of benign and malignant tumors, spread of tumors. Applied histopathology and clinical pathology. Immunity, knowledge of organisms commonly associated with diseases of the oral cavity (morphology cultural characteristics etc) of strepto, staphylo, pneumo, gono and meningococci, Clostridia group of organisms, Spirochetes, organisms of tuberculosis, leprosy, diphtheria, actinomycosis and moniliasis etc. Virology, Cross infection control, sterilization and hospital waste management Microbiology & Immunology as related to Oral Diseases in Children. Basic concepts, immune system in human body, Auto Immune diseases, Histopathology, Pathogenesis, Immunology of dental caries, Periodontal diseases. Tumors, Oral Mucosal lesions etc.



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Unit 4: Applied Physiology and Nutrition - Introduction, Mastication, deglutition, digestion and assimilation, Homeostasis, fluid and electrolyte balance. Blood composition, volume, function, blood groups and hemorrhage, Blood transfusion, circulation, Heart rate, Pulse, Blood pressure, capillary and lymphatic circulation, shock, respiration, control, anoxia, hypoxia, asphyxia, artificial respiration. Endocrine glands in particular reference to pituitary, parathyroid and thyroid glands and sex hormones. Role of calcium and Vit D in growth and development of teeth, bone and jaws. Role of Vit. A, C and B complex in oral mucosal and periodontal health. Physiology and function of the masticatory system. Speech mechanism, mastication, swallowing and deglutition mechanism, salivary glands and Saliva. Endocrines- General principles of endocrine activity and disorders relating to pituitary, thyroid, pancreas, parathyroid, adrenals, gonads, including pregnancy and lactation. Physiology of saliva, urine formation, normal and abnormal constituents, Physiology of pain, Sympathetic and parasympathetic nervous system. Neuromuscular co- ordination of the stomatognathic system.

Unit 5: Applied Pharmacology and Therapeutics- Definition of terminologies used - Dosage and mode of administration of drugs. Action and fate of drugs in the body, Drug addiction, tolerance and hypersensitive reactions, Drugs acting on the central nervous system, general anesthetics hypnotics. Analeptics and tranquilizers, Local anesthetics, Chemotherapeutics and antibiotics, Antitubercular and anti syphilitic drugs, Analgesics and antipyretics, Antiseptics, styptics, Sialogogues and antisialogogues, Haematinics, Cortisone, ACTH, insulin and other antidiabetics vitamins: A, D, B - complex group C and K etc. Chemotherapy and Radiotherapy.

Unit 6: Child Psychology and Behavior Management - Development & Classification of behavior, personality, intelligence in children - theories of child psychology - stages of psychological child development, fear anxiety, apprehension and its management including Non- pharmacological methods.

Unit 7: Pediatric Operative Dentistry including Cariology and Radiology - Principle of Operative Dentistry along with modifications of materials/past, current & latest including tooth colored materials - Modifications required for cavity preparation in primary and young permanent teeth - Various Isolation Techniques - Restorations of decayed primary, young permanent and permanent teeth in children using various restorative material like Glass Ionomer, Composites, Silver, Amalgam & its alternatives, Stainless steel, Polycarbonate and Resin Crowns / Veneers & fiber post systems. Introduction, radiation, background of radiation, sources, radiation biology, somatic damage, genetic damage, protection from primary and secondary radiation, Principles of X-ray production, applied principles of radio therapy and after care. Radiographic Techniques- Intra oral and extra oral radiography, Methods of localization digital radiology and ultra sound, Normal anatomical landmarks of teeth and jaws in radiograms, temporomandibular joint radiograms, neck radiograms. Historical background Definition - Etiology & Pathogenesis Caries pattern in primary, young permanent and permanent teeth in children - Rampant caries, early childhood caries and extensive caries - Definition, etiology, Pathogenesis, Clinical features, Complications and Management - Role of diet and nutrition in Dental Caries - Dietary modifications and Diet counseling - Dental Plaque - Definition, Initiation, Pathogenesis, Biochemistry, and Morphology' & Metabolism - Objective methods of Caries detection with emphasis on Caries Activity tests, Caries prediction, Caries susceptibility and their clinical



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Applications.

Preclinical Work

Drawing album and records

1. Table showing chronology of eruption of teeth
2. Table showing tooth dimensions
3. Pulp morphology
4. Development of dentition at different ages
5. Diagram showing cephalometric points, planes and angles
6. Modification of cavity preparation for primary teeth.
7. Modification of cavity preparation for permanent teeth
8. Mixed dentition analysis
9. Principles of soldering and welding
10. Principles and methods of rubber dam.

Dental anatomy exercises

1. Carving of primary and permanent dentition of right side

Conservative and endodontic exercises

1. Class I on 75, 55, 64, 84
2. Class I on 36, 16
3. Class I mesial and distal pit with palatal extension in 26
4. Class I with buccal extension on 36 or 46
5. Class II (conventional MO) on 75, 55, 64, 84
6. Class II (conventional DO) on 75, 55, 64, 84
7. Class II (Box preparation MO) on 75, 55, 64, 84
8. Class II (Box preparation DO) on 75, 55, 64, 84
9. Class II (conventional MO) on 36 and 16
10. Class II (conventional DO) on 46 and 26
11. Class II inlay in 37 or 47
12. Class II MOD in 46
13. Class III on 51, 62, 71, 82, 53, 73
14. Strip crown preparation in 51, 62
15. Stainless steel crown preparation on 75, 55, 64, 84
16. Jacket crown on 12 or 22 and 31 or 41
17. Crown with acrylic facing on 11 or 21
18. Pulpectomy in extracted teeth 51, 61, 54 or 64, 55 or 65, 74 or 84, 75 or 85,
19. RCT in extracted teeth 16, 11, 22, 36, 45 and 46

Prosthetic Exercises

1. Complete set up of dentition at the age of 6 years
2. Complete set up of dentition at the age of 10 years
3. Preparation of special trays with upper and lower impressions of 3 years old child
4. Models – models of children with normal occlusion at age 3,7,11 and 14 years

Orthodontic Exercises

1. Cephalograms –learning and analysis of children with normal occlusion and morphology at 3,7, 11 and 14 years



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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

2. Mixed dentition analysis – 1 case
3. Soldering exercises of Lamp post formation
4. Fabrication of 'C' clasp, Adam's clasp on molar, triangular clasp between 54 & 55
5. Fabrication of long labial bow, short labial bow
6. Fabrication of finger springs for mesial movements, helical coil canine retractor
7. Removable orthodontic appliances
 - i. Unilateral nonfunctional Space maintainer
 - ii. Bilateral nonfunctional Space maintainer
 - iii. Unilateral functional Space maintainer
 - iv. Unilateral functional Space maintainer
 - v. Expansion screw type Space regainer
 - vi. Sling shot type Space regainer
 - vii. Slit saddle type Space regainer
 - viii. Habit breaking appliance for thumb sucking habit
 - ix. Habit breaking appliance for tongue thrusting habit
 - x. Habit breaking appliance bluegrass appliance habit
 - xi. Habit breaking appliance for mouth breathing habit
 - xii. Hawley's appliance with anterior bite plane
 - xiii. Hawley's appliance with Posterior bite plane with Double cantilever spring
 - xiv. Hawley's appliance with Lower inclined plane
 - xv. Expansion plates with coffin springs
 - xvi. Expansion plates with expansion screw
 - xvii. Activator
 - xviii. Twin block appliance

Clinical Work

Comprehensive non-surgical periodontal management including Case history recording, scaling both hand and ultrasonic, root planing, splinting and coronoplasty. Abscess drainage - 50 cases

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3	3					3			
CO-2					3					2
CO-3					3					2
CO-4		3			2		3	2		
CO-5	2			3		2		3	3	3
CO-6	2			3		2		3	3	3

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution



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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

6. Course Teaching and Learning Methods

Teaching and Learning Methods		Duration in Hours
Classroom Interaction		
1. Face to Face Lectures	05	240
2. Seminars, Journal clubs, IDM	180	
3. Guest Lecture	05	
4. Brain Storming Sessions / Group Discussions / Discussing Possible Innovations	26	
5. Case Study Presentation	24	
Demonstrations		1480
1. Demonstration using Videos	20	
2. Demonstration using Physical Models/Systems	15	
3. Demonstration on a Computer	--	
Clinical Work		
1. Pre-Clinical area	650	
2. Clinical Area	595	
3. Hospital Setup		
4. Dental camp	100	
5. Outreach centres	100	
6. Industry/Field Visit	--	
Term Tests, Laboratory Examination/Written Examination, Presentations		80
Total Duration in Hours		1800

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the Programme Specifications document pertaining to the MDS in Pediatric and Preventive Dentistry Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or PEE) or subcomponent of CE (SC1, SC2, SC3 or SC4), COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation				
Subcomponent ▶	Component 1: CE			
	Theory		Practical/Clinical	
Subcomponent Type ▶	SC1 - Written assessment	SC2 - Assignment	SC3 - Clinical Assessment and Viva Voce I	SC4 - Clinical Assessment and Viva Voce II
Maximum Marks ▶	100	100	100	100
CO-1.	x		x	x
CO-2.			x	x
CO-3.			x	x
CO-4.	x	x	x	x
CO-5.	x	x	x	x
CO-6.		x	x	x

The details of SC1, SC2, SC3 or SC4 are presented in the Programme Specifications Document.



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The Course Leader assigned to the Course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the Course
1.	Knowledge	Seminars, Journal clubs
2.	Understanding	Seminars, Journal clubs
3.	Critical Skills	Class room lectures, Seminars, Journal clubs
4.	Analytical Skills	Class room lectures and tutorials
5.	Problem Solving Skills	Clinical posting
6.	Practical Skills	Clinical posting
7.	Group Work	Assignment, Clinical posting
8.	Self-Learning	Assignment, Clinical posting, Tutorials
9.	Written Communication Skills	Assignment,
10.	Verbal Communication Skills	Clinical posting
11.	Presentation Skills	Clinical posting, Seminars, Journal clubs and IDM
12.	Behavioral Skills	Clinical posting
13.	Information Management	Assignment, Tutorial, Seminars, Journal clubs
14.	Personal Management	Clinical posting
15.	Leadership Skills	Group discussion

9. Course Resources

a. Essential Reading

1. Course Notes
1. B D Chaurasia. (2010), Human Anatomy. Regional and Applied (Dissection and Clinical) Vol. 3: Head, Neck and Brain, 5th edition, Current Books International Publications, ,
2. Inderbir Singh. (1996), Human Embryology, 6th edition, Mc Milan India Ltd. Delhi.
3. Wheeler's, (1993), Dental Anatomy, Physiology and Occlusion, 7th edition, Prism Book Pvt. Ltd. Bangalore.
4. Stanley J. Nelson, (2009), Wheeler's Dental Anatomy, Physiology and Occlusion, 9th edition , Elsevier Health Sciences Health Sciences.
5. G.S.Kumar, (1990), Orban's Oral Histology and Embryology 10th edition, American Publication Ontario, Canada.
6. Leslie P. Gartner, James L Hiatt, (2010), MOLOR Textbook of Histology, 3rd edition, Elsevier Health Sciences Health Sciences.
7. Halim Ane, (2010), Textbook of Human Histology, Ane Books Pvt. Ltd.
8. Guyton C Arthur, John E Hall, (1996), Textbook of Medical Physiology, 9th edition, Prism &



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Sounder's, Bangalore.

9. Harbanslal. (1995), A Textbook of Biochemistry for Dental Students, 1st edition, CBS Pub. New Delhi.
10. Tripathi K.D. (2008), Essentials of Medical Pharmacology, 6th edition, Jaypee Brothers Medical Publishers, New Delhi.
11. Harsh Mohan, (2003), Pathology for dental student, 3rd Edition, Jaypee Brothers Publications.
12. R. Anantha Narayan, C. K. Jayaram Paniker, (2005), Text Book of Microbiology, 7th edition, Orient Longman Private Ltd, Chennai.
13. Stuart C. White, Michael J. Pharoah, (2014), Oral Radiology, 7th edition, Elsevier Health Sciences.

b. Recommended Reading

1. Wayne Sampson, John L. Montgomery, Gary L. Henryson, (1991), Atlas of the Human Skull, 1st Edition, Texas A & M University Press
2. Frank H. Netter, (2014), Atlas of Anatomy, 6th edition, Elsevier Health Sciences.
3. Ricki Lewis, (2007), Human Genetics: Concepts and Applications 7th edition, McGraw-Hill Publishing Company.
4. Gilroy, MacPherson, Schuenke et al, (2012), Atlas of Anatomy, 2nd ed. Thieme Medical Publishers
5. Jorde, Carey and Bamshad, (2010), Medical Genetics, 4th edition, Elsevier Health Sciences.
6. Cochard, (2012), Netter's Atlas of Human Embryology, Updated Edition, Elsevier Health Sciences.
7. Mitchell, (2009), Embryology- An illustrated Colour text, 2nd Edition, Churchill Livingstone Publisher.
8. Mary Bath-Balogh, Margaret J. Fehrenbach, (2014), Student Workbook for Illustrated Dental Embryology, Histology and Anatomy, 3rd Edition, Elsevier Health Sciences.
9. Sally Holden, Richard E. Charlick, (1991), Dental anatomy University of Michigan. School of Dentistry.
10. Mitchell, Peel, (2009), Histology - An illustrated Colour text, 1st Edition, Churchill Livingstone Publisher.
11. Ovalle, (2013), Netter's Essential Histology, 2nd Edition, Elsevier Health Sciences.
12. Stevens & Lowe's, (2014), Human Histology, 4th Edition, Elsevier Health Sciences.
13. White and Pharoah. Oral Radiology: Principles and Interpretation, 7th Edition, Elsevier Health Sciences.

c. Journals

1. New England Journal of medicine
2. Cell research
3. Journal of Maxillofacial and Oral surgery
4. Journal of Oral Rehabilitation
5. Oxford journals
6. International Journal of Molecular Sciences
7. Journal of Embryology and Experimental morphology
8. International Journal of Embryology
9. Italian Journal of Anatomy and Embryology



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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

10. Journal of Human Genetics & Embryology
11. The Journal of Clinical Embryology
12. British Dental Journal
13. International Journal of Oral Science
14. Brazilian Dental Journal

d. Websites

1. [http:// www.oxfordjournals.org/genomics](http://www.oxfordjournals.org/genomics)
2. <http:// www.ncbi.nlm.nih.gov/pubmed>
3. <http://mediconet.blogspot.in>
4. http://www.zapmeta.co.inhttps://embryology.med.unsw.edu.au/embryology/index.php/Main_Page
5. <http://www.indiana.edu>
6. <http://www.visembryo.com/>
7. <http://www.eu.Elsevier Health Scienceshealth.com/histology-and-cell-biology>

e. Other Electronic Resources

1. <https://ocw.mit.edu/index.htm>


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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

Course Title	Clinical Phase Intermediate
Course Code	PEC502A
Department	Pediatric and Preventive Dentistry
Faculty	Dental Sciences

1. Course Summary

This course enables the student to diagnose and treat diseases of the pulp and periapical tissues and also to use pharmacologic behaviour management technique. The student will be able to save natural primary and permanent teeth with an insight into indications and contraindications for endodontic treatment. The student will be able to improve skills in endodontic, prosthetic and periodontal therapy. The student will also be able to apply appropriate pharmacological domain necessary for pediatric behaviour management. This course is also planned to diagnose, prevent, intercept and manage orthodontic problems in children. The student will be able to explain biology of tooth movement, concepts of occlusion, TMJ anatomy and use of appropriate orthodontic diagnostic aids. The student will be trained to design and fabricate orthodontic appliances for specific clinical condition based on prediction and modification of growth. The student will be able to estimate the space availability followed by designing the appliances with relevant diagnostic aids. The student will be able to manage deleterious oral habits.

2. Course Size and Credits

Number of Credits	73
Credit Structure (Lecture: Tutorial: Practical)	20:0:28
Total Hours of Interaction	1800
Number of Weeks in a Year	50
Department Responsible	Pediatric and Preventive Dentistry
Total Course Marks	400
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this Course, the student will be able to:

- CO-1. Apply the basic concepts of occlusion, TMJ anatomy and pathology related to neuromuscular physiology in a child
- CO-2. Plan preventive and interceptive orthodontics
- CO-3. Observe the operating procedure for rehabilitating a pediatric patient under pharmacological domain
- CO-4. Perform appropriate endodontic therapy in primary and permanent teeth
- CO-5. Perform minor oral surgical procedures for trauma and pathology in a pediatric patient with empathy
- CO-6. Design suitable removable and fixed prosthesis for establishing form, function and esthetics.



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4. Course Contents

Theory

Unit 1: Behavior Management: Pharmacological methods including Conscious Sedation, Deep Sedation and General Anesthesia in Pediatric Dentistry: (Including Other Drugs, Synergic & Antagonistic Actions of Various Drugs Used in Children)

Unit 2: Pediatric Endodontics - Primary Dentition - Diagnosis of pulpal diseases and their management - Pulp capping, Pulpotomy, Pulpectomy (Materials & Methods), Controversies and recent concepts - Young permanent teeth and permanent teeth, Pulp capping, Pulpotomy, Apexogenesis, Apexification, Concepts, Techniques and Materials used for different procedures - Recent advances in Pediatric diagnosis and Endodontics.

Unit 3: Traumatic Injuries in Children - Classifications & Importance - Sequelae & reaction of teeth to trauma -Management of Traumatized teeth with latest concepts - Management of jaw fracture in children

Unit 4: Gingival and Periodontal diseases in children: Normal Gingiva & Periodontium in children. Gingival & Periodontal diseases - Etiology, Pathogenesis, Prevention & Management

Unit 5: Prosthetic consideration in Pediatric Dentistry: Classification of crowns, esthetic restorations and procedures for the same.

Unit 6: Management of Minor Oral Surgical Procedures in children: minor oral surgical procedures and conditions such as ranula, mucocele, frenectomy. Laser assisted procedures.

Unit 7: Preventive Orthodontics- introduction, space maintenance- indications, contraindications, various designs, materials used, newer modifications, advantages, longevity, disadvantages, space regainers- removable/fixed, biomechanics, factors affecting/ influencing the space regaining,, cephalometrics - history, uses, land marks, hand wrist radiographs, diagnosis, biology of tooth movement.

Unit 8: Interceptive Orthodontics: Concepts of occlusion and esthetics: Structure and function of all anatomic components of occlusion, mechanics of articulations, recording of masticatory function, diagnosis of Occlusal dysfunction, relationship of TMJ anatomy and pathology and related neuromuscular physiology. Comprehensive review of the local and systemic factors in the causation of malocclusion. Recognition and management of normal and abnormal developmental occlusions in primary, mixed and permanent dentitions in children (Occlusal Guidance).

Unit 9: Biology of tooth movement: A comprehensive review of the principles of teeth movement Review of contemporary literature. Histopathology of bone and periodontal ligament, Molecular and ultra-cellular consideration in tooth movement. serial extraction-diagnosis, follow up, midline diastema - etiology, management, cross bite- anterior/posterior, various management measures, myofunctional appliances- introduction, design and fabrication, indications, mode of growth modification and theory behind it, removable appliance- basic principle and fabrication.

Unit 10: Myofunctional appliances: Basic principles, contemporary appliances: Design & Fabrication Removable appliances: Basic principles, contemporary' appliances: Design & Fabrication g. Case selection & diagnosis in interceptive Orthodontics (Cephalometric, Image processing, Tracing, Radiation hygiene, Video imaging and advance Cephalometric techniques). h. Space Management: Etiology, Diagnosis of space problems, analysis, Biomechanics, Planned extraction in interception orthodontics.

Unit 11: Oral Habits in Children - Definition, Etiology & Classification Clinical features of digit sucking, tongue thrusting, mouth breathing and various other secondary habits - Management of oral habits in children.



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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

Clinical Work

Comprehensive case evaluation with complete records, treatment planning with chairside discussion for pediatric endodontics along with restorative dentistry with emphasis on pit and fissure sealants and fluoride application, preventive and interceptive orthodontics, pediatric endodontics for 50 cases including pharmacological and non-pharmacological domains of behaviour management.

5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3	3				1	3			
CO-2	3	3	2		2	2	3			3
CO-3			2	3		2		2	3	2
CO-4		2	3		3	3		3	1	3
CO-5		2	2	3	1	3		3	1	3
CO-6			2	1	2	3		3	1	3

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in Hours
Classroom Interaction	
1. Face to Face Lectures	05
2. Seminars, Journal clubs, IDM	180
3. Guest Lecture	05
4. Brain Storming Sessions / Group Discussions / Discussing Possible Innovations	18
5. Case Study Presentation	32
Demonstrations	
1. Demonstration using Videos	15
2. Demonstration using Physical Models/Systems	15
3. Demonstration on a Computer	--
Clinical Work	
1. Pre-Clinical area	
2. Clinical Area	1100
3. Hospital Setup	50
4. Dental camp	200
5. Outreach centres	100
6. Industry/Field Visit	--
Term Tests, Laboratory Examination/Written Examination, Presentations	80
Total Duration in Hours	1800

7. Course Assessment and Reassessment

The details of the components and subcomponents of course assessment are presented in the



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Programme Specifications document pertaining to the MDS in Pediatric and Preventive Dentistry Programme. The procedure to determine the final course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or PEE) or subcomponent of CE (SC1, SC2, SC3 or SC4), COs are assessed as illustrated in the following Table.

Focus of COs on each Component or Subcomponent of Evaluation				
Subcomponent	Component 1: CE			
	Theory		Practical/Clinical	
Subcomponent Type	SC1 - Written assessment	SC2 - Assignment	SC3 - Clinical Assessment and Viva Voce I	SC4 - Clinical Assessment and Viva Voce II
Maximum Marks	100	100	100	100
CO-1	x			x
CO-2	x	x	x	x
CO-3	x		x	x
CO-4	x	x	x	x
CO-5	x	x		x
CO-6	x			x

The details of SC1, SC2, SC3 or SC4 are presented in the Programme Specifications Document.

The Course Leader assigned to the course in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document.

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the Course
1.	Knowledge	Seminars, Journal clubs
2.	Understanding	Seminars, Journal clubs
3.	Critical Skills	Class room lectures, Seminars, Journal clubs
4.	Analytical Skills	Class room lectures and tutorials
5.	Problem Solving Skills	Clinical posting
6.	Practical Skills	Clinical posting
7.	Group Work	Assignment, Clinical posting
8.	Self-Learning	Assignment, Clinical posting, Tutorials
9.	Written Communication Skills	Assignment,
10.	Verbal Communication Skills	Clinical posting
11.	Presentation Skills	Clinical posting, Seminars, Journal clubs and IDM
12.	Behavioral Skills	Clinical posting
13.	Information Management	Assignment, Tutorial, Seminars, Journal clubs
14.	Personal Management	Clinical posting
15.	Leadership Skills	Group discussion

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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

9. Course Resources

a. Essential Reading

1. Ralph E McDonald, David R. Avery, Jeffery A Dean. (2004) Dentistry for the child and adolescent: 8th edition, Mosby Inc,.
2. J.R Pinkham. (2005) Pediatric Dentistry - Infancy through adolescence, 4th edition, Elsevier Science Ltd.
3. Sidney B Finn. (1973) Clinical Pedodontics; 4th edition, AITBS publishers
4. Welbury, Duggal & Hosey (2012). Paediatric Dentistry, 4th Edition, Oxford University Press
5. D J Forrester (1981). Paediatric Dental Medicine. Lea & Febiger, U.S.
6. John I Ingle, Leif K. Bakland, J. Craig Baumgartner. (2008) Textbook of Endodontics, 6th edition.
7. Andreasen, Bakland, Flores, Andreasen & Andersson. (2011) Traumatic Dental Injuries: A manual, 3rd Edition, Wiley Blackwell
8. Carranza's Clinical Periodontology (2011), 11th Edition, Elsevier.
9. Stanley F Malamed (2007). Medical Emergencies in the Dental Office, 6th Edition, Mosby Elsevier
10. W R Proffit, H W Fields, and David Sarver. (2012) Contemporary Orthodontics, 5th edition, Mosby
11. Stephen H Wei, Minoru Nakata. (1988) Occlusal guidance in pediatric dentistry, 1st edition, Tokyo Ishiyaku Euro America, Inc
12. T M Graber & R L Vanarsdall. (2011) Orthodontics: Current Principles and Techniques, 5th edition, Elsevier

b. Recommended Reading

1. Kennedy, Curzon & Roberts. (1996) Paediatric Operative Dentistry, 4th Edition, Wright publishers
2. Nikhil Marwah. (2009) Textbook of Paediatric Dentistry, 3rd Edition, Jaypee Publishers
3. M S Muthu. (2011) Paediatric Dentistry: Principles & Practice, 2nd Edition, Elsevier Publications
4. Cameron & Widmer. (2013) Handbook of Paediatric Dentistry. 4th edition, Mosby, Elsevier
5. Leonard, Kaban & Troulis. (2004) Paediatric Oral & Maxillofacial Surgery, 3rd Edition, W.B.Saunders
6. Martyn Cobourne and Andrew Di Biase. (2010) Handbook of Orthodontics, 1st Edition. Mosby
7. Laura Mitchell, Nigel E Carter & Bridget Double day (1996). An Introduction to Orthodontics, 3rd Edition, Oxford univ press
8. Jeryl D. English, DDS, MS, Timo Peltomaki, DDS, MS, PhD and Kate Pham-Litschel, DDS, MS, (2014) 2nd Edition Mosby's Orthodontic Review
9. Thomas M. Graber. (2005) Dentofacial Orthopedics with Functional Appliances, 2nd Edition.
10. Alison P. Howat, Nicholas J. Capp, N. Vincent J. Barrett. (1990) Colour atlas of occlusion and malocclusion, 2nd Edition. Mosby

c. Journals

1. International Journal of Basic & Clinical Pharmacology
2. Journal of Oral Pathology & Medicine
3. Oral Immunology and Microbiology



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4. Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology
5. Journal of Dental Research
6. Quintessence International
7. International Dental Journal
8. Journal of American Dental Association
9. British Dental Journal
10. Australian Dental Journal
11. Journal of Canadian Dental Association
12. Caries Research
13. Dental Traumatology
14. Special Care Dentistry
15. Community Dentistry and Epidemiology
16. Evidence Based Dentistry Journal
17. European Archives of Pediatric Dentistry
18. European Journal of Pediatric Dentistry
19. Journal of Clinical Pediatric Dentistry
20. International journal of pediatric dentistry
21. Journal of Dentistry for children
22. Pediatric Dentistry
23. Journal of Indian society of Pedodontics and preventive Dentistry
24. American Journal of Orthodontics and Dentofacial orthopedics
25. Angle Orthodontist

d. Websites

1. www.ncbi.nlm.nih.gov/pubmed
2. www.sciencedirect.com
3. www.ebscohost.com/academic
4. onlinelibrary.wiley.com/browse/publications/type/journal
5. <http://childrenshappyteeth.com/education/preventive-orthodontics/>
6. www.cda-adc.ca/jcda/vol-71/issue9/649.pdf
7. http://www.dentaltribune.com/articles/specialities/orthodontics/15976_preventive_orthodontics_is_it_a_logical_and_predictive_procedure.html
8. <http://www.medicaljb.com/article.aspx?jrid=158>
9. www.dentalclinicmanual.com/docs/IHS_DentSpecResGuideCh4.pdf
10. dental.tufts.edu/patient-care/specialty-clinics-and.../pediatric-dental-clinic
11. www.uofmchildrenshospital.org/Clinics/DiscoveryClinicPediatricSpecialt...

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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

Course Title	Clinical Phase Advanced
Course Code	PEC503A
Course Type	Program Specialization Teaching Course
Department	Pediatric and Preventive Dentistry
Faculty	Dental Sciences

1. Course Summary

This course equips the student to provide care to children with special health care needs including child abuse and neglect. The student will be able to recognise and manage children with special health care needs, with emphasis on preventive aspects. The student will be able to manage cleft patients by proper counselling, feeding, nasoalveolar bone remodelling with speech rehabilitation. The student will be able to differentiate systemic diseases and its management in dental office. The student will be able to explain the concept of forensic odontology mainly concentrating to medico legal aspect of child abuse and neglect. The module is also designed to introduce the student to concept of practice management and comprehensive management of children. The student will be trained to understand the concept of exclusive pediatric practice and its management. The student will also be exposed to successful pediatric practices both in the country and abroad to study the best practices. The student will be made aware of recent advances in equipment, techniques and practices in pediatric dentistry.

2. Course Size and Credits:

Number of Credits	51
Credit Structure (Lecture: Tutorial: Practical)	12:0:12
Total Hours of Interaction	1800
Number of Weeks in a Year	50
Department Responsible	Pediatric and Preventive Dentistry
Total Course Marks	400
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Course Outcomes (COs)

After the successful completion of this Course, the student will be able to:

- CO1: Plan comprehensive treatment using appropriate behavior management techniques
- CO2: Strategizing treatment protocols for dental neglect and child abuse.
- CO3: Analyze the protective action of both topical and systemic fluoride
- CO4: Evaluate levels of prevention of oral diseases in children
- CO5: Management strategies for children with special health care needs
- CO6: Incorporate the recent advances in pediatric dentistry into their practices



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4. Course Contents

Theory

Unit 1: Dental care of Children with special needs: Definition Etiology, Classification, Behavioral, Clinical features and Management of children with: Physically handicapping conditions including Comprehensive cleft care management with emphasis on counseling, feeding, nasopalveolar bone remodeling, speech rehabilitation. Mentally compromising conditions - Medically compromising conditions - Genetic disorders

Unit 2: Applied Medicine: Systemic diseases and its influence on general health and oral and dental health. Medical emergencies in the dental offices - Prevention, preparation, medico legal consideration, unconsciousness, respiratory distress, altered consciousness, seizures, drug related emergencies, chest pain, cardiac arrest, premedication, and management of ambulatory patients, resuscitation, applied psychiatry, child, adult and senior citizens. Assessment of case, inhibition, monitoring, extubation, complication assist in O.T. for anesthesia.

Unit 3: Preventive Dentistry: Epidemiology: Concepts, Methods of recording & evaluation of various oral diseases. Various national & global trends of epidemiology of oral diseases. Definition Principles and Scope Types of prevention Different preventive measures used in Pediatric Dentistry including fissure sealants and caries vaccine. Dental Health Education and School Dental Health Programmes Dental health concepts, Effects of civilization and environment, Dental Health delivery system, Public Health measures related to children along with principles of Pediatric Preventive Dentistry Fluorides: Historical background Systemic & Topical fluorides Mechanism of action Toxicity & Management. Defluoridation techniques. Chair side preventive measures for dental diseases, high-risk caries including rampant & extensive caries - Recognition, Features & Preventive Management, Pit and Fissures Sealants, Oral Hygiene measures, Correlation of brushing with dental caries and periodontal diseases.

Unit 4: Child Abuse & Dental Neglect - Medico legal aspects in Pediatric Dentistry with emphasis on informed concept – Forensic Odontology

Unit 5: Practice management - Setting up of Pediatric & Preventive dentistry Clinic. Emerging concept in Pediatric Dentistry

Clinical Work

1. Comprehensive case evaluation with complete records, treatment planning with chair side discussion for preventive and interceptive orthodontics, pediatric endodontics and restorative dentistry with emphasis on pit and fissure sealants and fluoride application for 30 cases including behaviour management under pharmacological domain.
2. Comprehensive case evaluation with complete records, treatment planning with chair side discussion for preventive and interceptive orthodontics, pediatric endodontics and restorative dentistry with emphasis on pit and fissure sealants and fluoride application for 10 cases including behaviour management under pharmacological domain for children with special health care needs.



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5. Course Map (CO-PO-PSO Map)

	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
CO-1	3	2	3	3		2		3	3	3
CO-2			3	2	2	2			2	3
CO-3		2	3	1		3	1	3	1	3
CO-4		2	2		2	2		2		3
CO-5		3	2	2	3	3	3	2	3	3
CO-6		2	2	1	3	3		3		3

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Course Teaching and Learning Methods

Teaching and Learning Methods	Duration in Hours	
Classroom Interaction	150	
1. Face to Face Lectures		03
2. Seminars, Journal clubs, IDM		90
3. Guest Lecture		03
4. Brain Storming Sessions / Group Discussions / Discussing Possible Innovations		26
5. Case Study Presentation	28	
Demonstrations	1490	
1. Demonstration using Videos		10
2. Demonstration using Physical Models/Systems		--
3. Demonstration on a Computer	--	
Clinical / Practical Work	1490	
1. Pre-Clinical area		--
2. Clinical Area		1180
3. Hospital Setup		--
4. Field work/dental camp		200
5. Outreach centres		100
6. Industry/Field Visit	--	
Term Tests, Laboratory Examination/Written Examination, Presentations	160	
Total Duration in Hours	1800	

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7. Course Assessment and Reassessment

The details of the components and subcomponents of Course assessment are presented in the Programme Specifications document pertaining to the MDS in Pediatric and Preventive Dentistry Programme. The procedure to determine the final Course marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the COs. In either component (CE or PEE) or subcomponent of CE (SC1, SC2, SC3 or SC4), COs are assessed as illustrated in the following Table

Focus of COs on each Component or Subcomponent of Evaluation				
	Component 1: CE			
Subcomponent ▶	Theory		Practical/Clinical	
Subcomponent Type ▶	SC1 -Written assessment	SC2 - Assignment	SC3 - Clinical Assessment	SC4 – Viva Voce
Maximum Marks ▶	100	100	100	100
CO-1	x	x	x	x
CO-2	x	x	x	x
CO-3	x		x	x
CO-4	x		x	x
CO-5	x	x	x	x
CO-6	x		x	x

The details of SC1, SC2, SC3 or SC4 are presented in the Programme Specifications Document.

The Course Leader assigned to the Course, in consultation with the Head of the Department, shall provide the focus of COs in each component of assessment in the above template at the beginning of the year. Course reassessment policies are presented in the Academic Regulations document

8. Achieving COs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S.No	Curriculum and Capabilities Skills	How imparted during the Course
1.	Knowledge	Seminars, Journal clubs
2.	Understanding	Seminars, Journal clubs
3.	Critical Skills	Class room lectures, Seminars, Journal clubs
4.	Analytical Skills	Class room lectures and tutorials
5.	Problem Solving Skills	Clinical posting
6.	Practical Skills	Clinical posting
7.	Group Work	Assignment, Clinical posting
8.	Self-Learning	Assignment, Clinical posting, Tutorials



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9.	Written Communication Skills	Assignment
10.	Verbal Communication Skills	Clinical posting
11.	Presentation Skills	Clinical posting, Seminars, Journal clubs and IDM
12.	Behavioural Skills	Clinical posting
13.	Information Management	Assignment, Tutorial, Seminars, Journal clubs
14.	Personal Management	Clinical posting
15.	Leadership Skills	Group discussion

9. Course Resources

a. Essential Reading

1. Priya Verma Gupta, Amitha M. Hegde. (2012) Understanding and Management of Special Child in Pediatric Dentistry, 1st edition, Jaypee Brothers Medical Publishers
2. Ralph E. McDonald, David R. Avery, Jeffery A. Dean. (2004) Dentistry for the child and adolescent, 8th edition, Mosby Inc.
3. J.R Pinkham. (2005) Pediatric Dentistry - Infancy through adolescence, 4th edition, Elsevier Science Ltd.
4. Crispian Scully. CBE (2003) Oxford Handbook of Applied Dental Sciences, 1st edition, Oxford University press
5. Richard E. Stallard (1982). A Textbook of preventive dentistry, 2nd edition, W.B. Saunders Company
6. S S. Hiremath(2011) Textbook of Preventive and Community Dentistry, 2nd edition, Elsevier India Ltd.
7. Hardy Limeback. (2012) Comprehensive Preventive Dentistry, 1st edition, John Wiley & Sons Ltd.
8. Monica L. McCoy, Stefanie M. Keen (2013) Child Abuse and Neglect, 2nd Edition, Psychology Press
9. David Howe.(2005) Child Abuse and Neglect: Attachment, Development and
10. Intervention, 1st edition, Palgrave Macmillan
11. R.N.Srivastava, Rajeev Seth, Joan Van Niekerk.(2013) Child Abuse and Neglect
12. Challenges and Opportunities, 1st edition, Jaypee Brothers Medical Publishers

b. Recommended Reading

1. Goran Koch, Sven Poulsen.(2009) Pediatric dentistry: A Clinical Approach, 2nd edition, Wiley-Blackwell
2. Brian R. Walker, Nicki R. Colledge, Stuart Ralston, Ian D. Penman. (2014) Davidson's Principles and Practice of Medicine, 22nd edition, Churchill Livingstone
3. Anthony Fauci, Eugene Braunwald, Dennis Kasper, Stephen Hauser, Dan Longo, J. Jameson, Joseph Loscalzo.(2012) Harrison's Principles of Internal Medicine, 18th edition, Mcgraw-Hill companies

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4. Donald Hunter, R. R. Bomford. (1968) Hutchison's Clinical Methods, 15th edition, Lippincott

c. Journals

1. Oral Immunology and Microbiology
2. Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology
3. Journal of Dental Research
4. Quintessence International
5. International Dental Journal
6. Journal of American Dental Association
7. British Dental Journal
8. Australian Dental Journal
9. Journal of Canadian Dental Association
10. Caries Research
11. Dental Traumatology
12. Special Care Dentistry
13. Community Dentistry and Epidemiology
14. Evidence Based Dentistry Journal
15. European Archives of Pediatric Dentistry
16. European Journal of Pediatric Dentistry
17. Journal of Clinical Pediatric Dentistry
18. International journal of pediatric dentistry
19. Journal of Dentistry for children
20. Pediatric Dentistry
21. Journal of Indian society of Pedodontics and Preventive Dentistry
22. American Journal of Orthodontics and Dentofacial orthopedics
23. Angle Orthodontist

d. Websites

1. www.scdonline.org
2. www.sscdentistry.com/
3. www.safehorizon.org/page/10-signs-of-child-abuse-58.html
4. ww.helpguide.org/articles/abuse/child-abuse-and-neglect.htm
5. www.asca.org.au/about/resources/types-of-child-abuse.aspx

e. Electronic database

1. EBSCO
2. PUBMED
3. HELINET
4. SCIENCE DIRECT
5. Wiley's online

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Module Specifications

Module Title	Clinical Photography
Module Code	MF501A
Module Type	Faculty Common Module
Department	Orthodontics and Dentofacial Orthopedics
Faculty	Dental Sciences

1. Module Summary

The aim of this module is to promote the use of digital photography in dental practices, and to give the necessary information and techniques to achieve good quality and consistent results. This module will cover all aspects of the use of digital photography in dental practice and will be taken through photography from the basics to choosing correct equipment, setting up equipment to optimum settings, techniques for consistent imaging and the safe storage of images.

The student will be able to gain skills and experience of Clinical Photography through introduction to the range of services provided in the specialism and the interaction with patients and patient-centred practice. On completion of this module the student will be able to perform some routine standardized representational photography of patients.

2. Module Size and Credits:

Number of Credits	1
Credit Structure (Lecture: Tutorial: Practical)	0:0:30
Total Hours of Interaction	30
Number of Weeks in a Term	26
Department Responsible	Orthodontics and Dentofacial Orthopedics
Total Module Marks	20
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Module Outcomes (MOs)

After the successful completion of this Module, the student will be able to:

- MO-1.** Describe the basic parts and functions of the camera, Principles behind the working of a camera, types of camera and components of a SLR camera.
- MO-2.** Demonstrate how to use a DSLR.
- MO-3.** Perform the skills of taking both intraoral and extraoral photographs of the module.

4. Module Contents

Theory

1. Introduction: why take photography in dentistry, why go Digital
2. Basic terms: Resolution, focal depth, shutter speed, macro function/ lens
3. Camera basics: Types of cameras, parts of camera, working mechanism, suggested cameras



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for dental photography, standardization of photography, components of a SLR camera

4. Photographic set up: background, lighting, flash, room specifications
5. Clinical requirements for photographic records: Digital camera setup/ring flash/macro lens, special cheek retractors, dental mirrors
6. Clinical photography: extraoral and intraoral photography, helpful hints
7. Post processing your digital images: Downloading to the computer, editing of photographs, saving the images

Practical Work

1. Demonstration of the parts of the camera
2. Choosing the settings for photography
3. Extraoral and intraoral profiling of the patient

5. Module Map (MO-PO-PSO Map)

MOs	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		
MO-2	3			3			3	3		
MO-3			3		3	3		3		3

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Module Teaching and Learning Methods

Teaching and Learning Methods	Duration in Hours
Face to Face Lectures	6
Demonstration using Physical Models/Systems	7
Assessment and practical project	2
Total Duration in Hours	15

7. Module Assessment and Reassessment

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.



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Focus of MOs on each Component or Subcomponent of Evaluation		
Component 1: CE		
Subcomponent ▶	Theory	
Subcomponent Type ▶	SC1 - Assessment	SC2 - Assignment
Maximum Marks ▶	10	10
MO-1	x	x
MO-2	x	x
MO-2	x	x

The Module Leader assigned to the Module, in consultation with the Head of the Department, shall provide the focus of MOs in each component of assessment in the above template at the beginning of the year. Module reassessment policies are presented in the Academic Regulations document.

8. Achieving MOs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the Module
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

9. Module Resources

a. Essential Reading

1. Graber, Vanarsdall. Orthodontics Current Principles Techniques; 4th Ed
2. Matrishva B. Vyas. Clinical photography in dentistry. Jaypee publication.
3. Wolfgang Bengal. Mastering Digital Dental Photography. Quintessence 2006.
4. Shadi S. Samawi. A Short Guide to Clinical Digital Photography in Orthodontics
5. Eduardo C. Digital Dental Photography: A Clinician's Guide. Wiley-Blackwell. 2010.
6. Ahmad, Irfan . Digital and Conventional Dental Photography - A Practical Clinical Manual. Quintessence Publishing Company.
7. Gábor Matyasi. Interactive Dental Photography. Truewhy saloon.
8. Warren Rosenberg. How to Master Digital Dental Photography
9. Eliakim Mizrahi, Taylor & Francis Group. Orthodontic pearls: A selection of practical tips and clinical expertise. 2004

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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

Module Title	Basic and Advanced Life Support
Module Code	MF502A
Module Type	Faculty Common Module
Department	Oral and Maxillofacial Surgery
Faculty	Dental Sciences

1. Module Summary

The Basic Life Support Program aims to educate health care work force to provide emergency life support, cardiopulmonary resuscitation and the use of automatic external defibrillator in adults, children and infants as applicable. The student also learns the basics of airway management, relief of choking, use of adjuvant for rescue breathing for adult, child and infants.

2. Module Size and Credits:

Number of Credits	1
Credit Structure (Lecture: Tutorial: Practical)	0:0:30
Total Hours of Interaction	30
Number of Weeks in a Term	26
Department Responsible	Oral and Maxillofacial Surgery
Total Module Marks	20
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Module Outcomes (MOs)

After the successful completion of this Module, the student will be able to:

- MO-1.** Describe and demonstrate effective cardio pulmonary resuscitation with automatic External Defibrillator use for adults and children with 1 rescuer and 2 rescuers.
- MO-2.** Describe and demonstrate effective cardio pulmonary resuscitation for infants with 1 rescuer and 2 rescuers.
- MO-3.** Differentiate between adult, child and infant rescue techniques.
- MO-4.** Demonstrate rescue breathing for adult, child and infant
- MO-5.** Demonstrate bag mask technique for adult, child and infant
- MO-6.** Demonstrate relief of choking for adult, child and infant

4. Module Contents

Unit 1: Cardio pulmonary resuscitation with automatic External Defibrillator use for adults with 1 and 2 rescuer Signs and symptoms, Steps of CPR and demonstration, Steps of AED use and demonstration

Unit 2: Cardio pulmonary resuscitation with automatic External Defibrillator use for children with 1 and 2 rescuers Signs and symptoms, Steps of CPR with 1 rescuer, Steps of CPR with 2 rescuer, Steps of CPR and AED demonstration with 2 rescuers

Unit 3: Differences between adult, child and infant techniques, Rescue breathing for adults, Rescue breathing for infants and children Signs and symptoms, causes, methods, Bag mask technique for Adults, children and infants Rationale and method of use Demonstration, Relief of choking for adults, children and infants Signs and symptoms, causes Demonstration and Methods of rescue



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5. Module Map (MO-PO-PSO Map)

MOs	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		
MO-2	3			3			3	3		
MO-3			3		3	3		3		3
MO-4	3	3			3		2	2		
MO-5					3			2		
MO-6					3				2	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Module Teaching and Learning Methods

Teaching and Learning Methods	Duration in Hours
Face to face lectures	4
Advanced Learning Centre	24
Term Tests, Laboratory Examination/Written Examination, Presentations	2
Total Duration in Hours incl assessment	30

7. Module Assessment and Reassessment

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

Focus of MOs on each Component or Subcomponent of Evaluation			
Subcomponent ▶	Component 1: CE		
	Theory		
Subcomponent Type ▶	SC1 - Assessment	SC2 - Assignment	
Maximum Marks ▶	10	10	
MO-1	x	x	
MO-2	x	x	
MO-3	x	x	
MO-4	x	x	
MO-5	x	x	
MO-6	x	x	

The Module Leader assigned to the Module, in consultation with the Head of the Department, shall provide the focus of MOs in each component of assessment in the above template at the beginning of the year. Module reassessment policies are presented in the Academic Regulations document.

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8. Achieving MOs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the Module
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

9. Module Resources

Essential Reading

1. Emergency Response Manual

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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

Module Title	Personality Development and Soft Skills
Module Code	MF503A
Module Type	Faculty Common Module
Department	Directorate of Transferable Skills and Leadership Development
Faculty	Dental Sciences

1. Module Summary

This module aims to help the student understand the nuances of interpersonal skills and orients them to handle work situations in a professional manner.

2. Module Size and Credits:

Number of Credits	1
Credit Structure (Lecture: Tutorial: Practical)	0:0:30
Total Hours of Interaction	30
Number of Weeks in a Term	26
Department Responsible	Directorate of Transferable Skills and Leadership Development
Total Module Marks	20
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Module Outcomes (MOs)

After the successful completion of this Module, the student will be able to:

- MO-1.** Explain the concept of interpersonal effectiveness
- MO-2.** Identify the nuances of working in teams, conflict handling, and time management
- MO-3.** Apply the principles of interpersonal communication towards professional betterment
- MO-4.** Apply time management tools for optimal usage of time

4. Module Contents

Unit 1: Communication Skills for Interpersonal Effectiveness: Explanation of interpersonal effectiveness and its importance, working in teams, Understanding self – Johari Window, Conflict handling at workplace

Unit 2: Time Management: The concept of time management and self-management, time management matrix, time management tools

5. Module Map (MO-PO-PSO Map)

MOs	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		
MO-2	3						3	3		
MO-3			3		3	3		3		3
MO-4	3	3			3		2	2		

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution



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6. Module Teaching and Learning Methods

Teaching and Learning Methods	Duration in Hours
Face to Face Lectures	10
Group discussions	4
Assessment	1
Total Duration in hours including assessment	15

7. Module Assessment and Reassessment

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

Focus of MOs on each Component or Subcomponent of Evaluation		
	Component 1: CE	
Subcomponent ▶	Theory	
Subcomponent Type ▶	SC1 - Assessment	SC2 - Assignment
Maximum Marks ▶	10	10
MO-1	x	X
MO-2	x	X
MO-3	x	X
MO-4	x	X

The Module Leader assigned to the Module, in consultation with the Head of the Department, shall provide the focus of MOs in each component of assessment in the above template at the beginning of the year. Module reassessment policies are presented in the Academic Regulations document.

8. Achieving MOs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the Module
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--



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13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

9. Module Resources

Essential Reading

Modules notes and ppt

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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

Module Title	Law for Dental Professionals
Module Code	MF501A
Module Type	Faculty Common Module
Department	School of Law
Faculty	Dental Sciences

1. Module Summary

This Course creates awareness regarding ethical and professional behaviour in both clinical and societal setups while keeping in mind the legal aspects of their behaviour. The students are taught to identify various situations that may present an ethical dilemma in everyday clinical life and act in a professional manner. The students are also trained to understand the legal system in India and its functioning especially in relation to medicolegal situations.

2. Module Size and Credits:

Number of Credits	1
Credit Structure (Lecture: Tutorial: Practical)	3:0:1
Total Hours of Interaction	15
Number of Weeks in a term	20
Department Responsible	School of Law
Total Course Marks	100
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Module Outcomes (MOs)

After the successful completion of this course, the student will be able to:

MO-1. Describe the structure and functioning of legal system of India

MO-2. Differentiate between various laws relevant to dentistry

MO-3. Identify clinical situations that pose ethical dilemma to be resolved with sound ethical principles

MO-4. Apply principles of professionalism in the practice of dentistry

MO-5. Communicate effectively with patients, colleagues and public to instill a positive dental attitude

MO-6. Prepare plan of action in case of litigation against the doctor

4. Module Contents

1	Introduction to Constitution of India		
2	Laws relevant to dentistry	i.	Civil, criminal laws and code of Procedure
		ii.	Laws relevant to consent
		iii.	Laws relevant to care
		iv.	Laws relevant to confidentiality
		v.	Consumer protection act
3	Ethics and code of conduct in dentistry	i	In clinical scenario
		ii	In research
4	Professionalism in dentistry	i	Concept and principles of professionalism
5	Communicating effectively		



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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

5. Module Map (MO-PO-PSO Map)

MO's	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1						1				1
MO-2						1				1
MO-3					2	3				3
MO-4						3				3
MO-5				2	2	3				3
MO-6					2	2				2

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Module Teaching and Learning Methods

Teaching and Learning Methods	Duration in hours	Total Duration in Hours
Face to Face Lectures		10
Demonstrations		00
1. Demonstration using Videos	00	
2. Demonstration using Physical Models /Patients	00	
Practical Work		00
Pre-Clinical laboratories	00	
Clinical Area – FDS	00	
Workplace based assessment methods	00	
Hospital Setup – MSRH	00	
Field work/dental camp	00	
Outreach centres	00	
Advanced Learning Centre	00	
Projects	00	
Innovative methods – DOPS, mini CEX, OSCE/OSPE	00	
Others		4
1. Case Study Presentation	04	
2. Guest Lecture	00	
3. Industry / Field Visit	00	
4. Brain Storming Sessions	00	
5. Group Discussions	05	
6. Discussing Possible Innovations	00	
Term Tests, Laboratory Examination/Written Examination, Presentations		1
Total Duration in Hours		15

7. Module Assessment and Reassessment

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.



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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

Focus of MOs on each Component or Subcomponent of Evaluation			
Component 1: CE			
Subcomponent ▶	Theory		
Subcomponent Type ▶	SC1 - Assessment	SC2 - Assignment	
Maximum Marks ▶	10	10	
MO-1	x	x	
MO-2	x	x	
MO-3	x	x	
MO-4	x	x	
MO-5	x	x	
MO-6	x	x	

The Module Leader assigned to the course, in consultation with the Head of the Department, shall provide the focus of MOs in each component of assessment in the above template at the beginning of the year. Module reassessment policies are presented in the Academic Regulations document.

8. Achieving MOs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the course
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

9. Module Resources

f. Essential Reading

1. Module notes
2. Paul G. Medical Law for the Dental Surgeons. 1st Ed., Jaypee Publishers.



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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

Module Title	Teacher Training Module
Module Code	MF505A
Module Type	Elective Module
Faculty	Dental Sciences

1. Module Summary

The aim of this module is to equip students with necessary skills and competencies to deliver pedagogy by making him/her experience teaching. The student is trained to develop notes, plan lesson, use teaching learning methods and media effectively. The student is also trained to develop teaching or training content and session notes on an allotted topic and deliver the same to a group of students. They have to reflect on the student feedback and discuss the corrective measures with the supervisors.

2. Module Size and Credits:

Number of Credits	1
Credit Structure (Lecture: Tutorial: Practical)	0:0:30
Total Hours of Interaction	30
Number of Weeks in a Term	26
Department Responsible	Health Profession Education Unit
Total Module Marks	20
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Module Outcomes (MOs)

After the successful completion of this Module, the student will be able to:

- MO-1. Develop teaching notes on the allotted topic
- MO-2. Deliver lecture to a group of students
- MO-3. Submit questions for assessment relevant to the allotted topic
- MO-4. Analyze student feedback to initiate corrective actions.

4. Module Contents

Unit 1: Educational objectives - Cognitive, Psychomotor, Affective

Unit 2: Writing learning outcomes

Unit 3: Teaching learning methods - Large group, small group, individual and domain based, teacher centered and student centered methods

Unit 4: Media - Power point presentations, use of chalk and board, handouts etc.

Unit 5: Tips for effective presentation

Unit 6: Assessment methodology - Different assessment methods, aligning with learning outcomes



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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

5. Module Map (MO-PO-PSO Map)

MOs	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		
MO-2	3			3			3	3		
MO-3			3		3	3		3		3
MO-4		3		3			2		3	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Module Teaching and Learning Methods

Teaching and Learning Methods	Duration in Hours
Theory	
1. Lectures	10
2. Symposium/panel discussion	
3. Small Group discussion	5
4. Team teaching	5
5. Role Play/Case based discussion	
Self-directed learning	
1. Assignment	
2. Conferences/ seminars/CDE's	-
3. Workshops	-
4. Information Centre	5
5. Observership	
Term Tests, Laboratory Examination/Written Examination, Presentations	5
Total Duration in Hours incl. assessment	30

7. Module Assessment and Reassessment

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

Focus of MOs on each Component or Subcomponent of Evaluation		
Subcomponent ▶	Component 1: CE	
	Theory	
Subcomponent Type ▶	SC1 - Assessment	SC2 - Presentation
Maximum Marks ▶	10	10
MO-1	X	x
MO-2	X	x
MO-3	X	x
MO-4	X	x



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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

The Module Leader assigned to the Module, in consultation with the Head of the Department, shall provide the focus of MOs in each component of assessment in the above template at the beginning of the year.

Module reassessment policies are presented in the Academic Regulations document.

8. Achieving MOs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the Module
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

9. Module Resources

Essential Reading

1. Srinvasa D.K., Ananthakrishnan N, Sethuraman K.R, Santosh Kumar. (eds.) *Medical Education: Principles & Practice, (Revised Edition)* 1995.
2. Ananthakrishnan N, Sethuraman K.R, Santosh Kumar. (eds.) *Medical Education: Principles & Practice , Volume II –Trainers' Manual*, National Teacher Training Centre, Jawaharlal Institute of Medical Education and Research, (JIPMER), Pondicherry
3. Singh T., Gupta P., Singh D.(eds.) *Principles of Medical Education*, Fourth edition IAP National Publication House, Gwalior, JAYPEE Brothers, 2013



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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

Module Title	Research Methodology
Module Code	MR501A
Module Type	Research Module
Department	Public Health Dentistry
Faculty	Dental Sciences

1. Module Summary

This module deals with the principles of research, research methodology and significant phases of research including sampling methodologies and its importance and development and validation of study tools. The students will be taught the significant role of Literature Review in a research cycle and the expectations from good literature review as well as procedure for systematic literature review. The essential aspects of technical communication to develop desirable writing skills for the preparation of research document including research paper as well as the skills for an effective presentation will also be discussed. The module also emphasizes the desirable close knit relation between innovation and concept of out of the box thinking. Students will get an insight into the privilege, honor and the associated responsibilities of a researcher.

2. Module Size and Credits:

Number of Credits	2
Credit Structure (Lecture: Tutorial: Practical)	15:0:30
Total Hours of Interaction	45
Number of Weeks in a Term	1
Department Responsible	Public Health Dentistry
Total Module Marks	100
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Module Outcomes (MOs)

After the successful completion of this Module, the student will be able to:

- MO-1.** Describe the value, scope, relevance and mandatory steps of research as well as principles of effective research
- MO-2.** Apply the procedures outlined for systematic literature review
- MO-3.** Develop and present well-structured research proposal and research paper invoking clearly outlined principles
- MO-4.** Identify and apply the essential skills desirable for an effective technical presentation

4. Module Contents

Unit 1 : Foundations of Research – Definitions of Research, Mandatory Steps in Research, Types of Research, Relevance of Research for Innovation and Technology Development, Effective Research and Self Discipline.



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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

Unit 2 : Out Of the Box Thinking and Systematic approach in Research – Transformation to Impossible Thinking, Convergent and Divergent Thinking, Generation, Evaluation and Selection of Ideas.

Unit 3: Literature Review – Importance of Literature Review, Constituents of Good Literature Review, Strategies for Literature Search, Referencing, Paraphrasing, and Summarizing Academic Standards and Ethics Statistical Methods and Data Analysis

Unit 4: Research Proposal – Structure of a Good Research Proposal, Getting Started, Tips for Compilation of Good Research Proposal. Technical Communication - Research Paper for Publication- Significance of Problem Statement and its scope, Formulation of Hypothesis, Adequacy of Methodology, Significance of Presentation and Discussion of Results, Relevance and Importance of references.

Unit 5 : Effective Presentation – Preparation, Templates, Balance between Good Design and Good Content, Planning and Sequencing, PAMPERS (Projection, Articulation, Modulation, Punctuation, Enunciation, Repetition and Speed) rule, PEOPLE (Position & Gestures, Eye Contact, Orientation, Proximation, Looks & Appearance, and Expressions & Emotion) rule, 4P's Rule (Plan, Prepare, Practice and Present), Essentials of Effectiveness, Effective Pausing and Inclusive Answering.

5. Module Map (MO-PO-PSO Map)

MO's	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		
MO-2	3			3			3	3		
MO-3			3		3	3		3		3
MO-4	3	3			3		2	2		

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Module Teaching and Learning Methods

Teaching and Learning Methods	Duration in Hours
Face to Face Lecture	15
Interaction/tutorial	26
Written Examination, Assignment, Presentations	4
Total Duration in Hours	45

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7. Module Assessment and Reassessment

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

Focus of MOs on each Component or Subcomponent of Evaluation		
Component 1: CE		
Subcomponent ▶	Theory	
Subcomponent Type ▶	SC1 - Written assessment	SC2 - Assignment
Maximum Marks ▶	50	50
MO-1	x	x
MO-2	x	x
MO-3	x	x
MO-4	x	x
The details of SC1, SC2, SC3 or SC4 are presented in the Programme Specifications Document.		

The Module Leader assigned to the Module, in consultation with the Head of the Department, shall provide the focus of MOs in each component of assessment in the above template at the beginning of the year. Module reassessment policies are presented in the Academic Regulations document.

8. Achieving MOs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the Module
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--



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9. Module Resources

Essential Reading

1. Class notes
2. Booth WC, Colomb and GG Williams. (2005) The craft of Research, Chicago University.
3. William MK and Trochim. (2003) Research methods, 2nd edition, Biztantra Publications
4. Jonathan Grix. (2004) The foundation of Research, Palgrave Study Guides
5. Park's text book of Preventive and Social Medicine by K.Park. 2013, Banarasidas
6. Bhanot Publishers 22nd Edition ISBN-10: 9382219021, ISBN-13: 978-9382219026.
7. Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health by David L.
8. Katz, Joann G.Elmore, Dorothea M.G.Wild, Sean C.Lucan. 2014, Saunders Elsevier publication 4th Edition ISBN-13: 978-1455706587, ISBN-10: 1455706582.
9. Health research methodology: a guide for training in research methods (western pacific education in action series no.5) by WHO, 2001, World Health Organization 2nd edition ISBN-10: 929061157X , ISBN-13: 978-9290611578.
10. Research Methodology: Methods & Techniques Kothari C.R., Gaurav Garg 2013, New Age International Publishers, 3rd edition ISBN-13: 978-8122436235.
11. Introduction to Biostatistics by Mahajan B.K. 2010 7th Edition JPB Publishers ISBN-10: 8184487134, ISBN-13: 978-818448713.
12. Oral health Surveys basic methods by WHO, 2013, 5th edition World Health Organisation ISBN: 978 92 4 154864 9.

Recommended Reading

1. Wisker Gina. (2001) The post graduate research handbook, Palgrave
2. Rogg G and Petre M (2004) The unwritten rules of PhD research, open university



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Module Title	Short Term Project/ Group Project
Module Code	MR502A
Module Type	Research Module
Department	Respective Department
Faculty	Dental Sciences

1. Module Summary

The aim of the module is that the student group should be able to design a research project either individually or as a group in their areas of specialization with in short period. The students are required to develop a report for assessment. The student is expected to finalize the report in form of a manuscript and submit to the constituted committee. Students can choose a project from the priority areas of research of the Faculty.

2. Module Size and Credits:

Number of Credits	6
Credit Structure (Lecture: Tutorial: Practical)	15:0:30
Total Hours of Interaction	150
Number of Weeks in a Term	1
Department Responsible	Respective Department
Total Module Marks	100
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Module Outcomes (MOs)

After the successful completion of this Module, the student will be able to:

- MO-1.** Work in a team and undertake a project in their area of specialization
- MO-2.** Apply the design methods and techniques for executing the project
- MO-3.** Apply appropriate methodology while formulating a project

4. Module Contents

Need for undertaking a project, design specifications, design, analysis, design evaluation and presentation

Project Management

Costing, Finance Management, Procurement, Project Development, Testing, Project

Evaluation, Exhibition, Presentation

Team building, Team work, Leadership skills

5. Module Map (MO-PO-PSO Map)

MO's	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		
MO-2	3						3	3		
MO-3			3		3	3		3		3

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution



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6. Module Teaching and Learning Methods

Teaching and Learning Methods		Duration in Hours
Face to Face Lectures	-	60
Others		
1. Guest Lecture	-	
2. Industry/Field Visit		
3. Brain Storming Sessions	10	
4. Group Discussions	40	
5. Discussing Possible Innovations	10	
Report writing, Presentations		90
Total Duration in Hours		150

7. Module Assessment and Reassessment

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

Focus of MOs on each Component or Subcomponent of Evaluation		
Subcomponent ▶	Component 1: CE	
	Theory	
Subcomponent Type ▶	SC1 - Presentation	SC2 - Report
Maximum Marks ▶	50	50
MO-1	x	x
MO-2	x	x
MO-3	x	x
The details of SC1, SC2, SC3 or SC4 are presented in the Programme Specifications Document.		

The Module Leader assigned to the Module, in consultation with the Head of the Department, shall provide the focus of MOs in each component of assessment in the above template at the beginning of the year. Module reassessment policies are presented in the Academic Regulations Document.



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8. Achieving MOs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the Module
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

9. Module Resources

Essential Reading

Class notes

Relevant books, articles and electronic resources



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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

Module Title	Library Dissertation
Module Code	MR503A
Module Type	Research Module
Department	Respective Department
Faculty	Dental Sciences

1. Module Summary

This module deals with survey, review and critical appraisal of literature. The students will be able to use various search engines to identify and select literature with good scientific value. This module emphasizes the student to apply good practices and guidelines of a systematic and structured literature review to collect, comprehend, sort and document the available information in open literature. In the context of reviewed contemporary research work, student acquires wider breadth of knowledge and will be able to formulate research question to be addressed in the main dissertation. The module insists on the preparation and submission of manuscript for publication

2. Module Size and Credits:

Number of Credits	4
Credit Structure (Lecture: Tutorial: Practical)	15:0:30
Total Hours of Interaction	120
Number of Weeks in a Term	26
Department Responsible	Respective Department
Total Module Marks	100
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Module Outcomes (MOs)

After the successful completion of this Module, the student will be able to:

- MO-1. Differentiate types of scientific literature, search strategies and research designs
- MO-2. Select topic relevant to the field of study
- MO-3. Select literature utilising different search engines
- MO-4. Review the selected literature and compile it
- MO-5. Formulate a research question based on the outcome of literature review
- MO-6. Prepare scientific manuscript for publication

4. Module Contents

Core specialty content

5. Module Map (MO-PO-PSO Map)

MO's	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		
MO-2	3						3	3		
MO-3			3		3	3		3		3
MO-4	3	3			3		2	2		
MO-5		2			3			2		2
MO-6			2						2	

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution



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6. Module Teaching and Learning Methods

Teaching and Learning Methods	Duration in Hours
Interaction/tutorial/self-directed learning	114
Term Tests, Laboratory Examination/Written Examination, Presentations	6
Total Duration in Hours	120

7. Module Assessment and Reassessment

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

Focus of MOs on each Component or Subcomponent of Evaluation			
Subcomponent ▶	Component 1: CE		
	Theory		
Subcomponent Type ▶	SC1 - Presentation	SC2 - Report	
Maximum Marks ▶	50	50	
MO-1	x	x	
MO-2	x	x	
MO-3	x	x	
MO-4	X	X	
MO-5	x	x	
MO-6	x	x	

The Module Leader assigned to the Module, in consultation with the Head of the Department, shall provide the focus of MOs in each component of assessment in the above template at the beginning of the year. Module reassessment policies are presented in the Academic Regulations document.

8. Achieving MOs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the Module
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment



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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

7.	Group Work	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

9. Module Resources

Essential Reading

Relevant books, articles and electronic resources

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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

Module Title	Dissertation
Module Code	MR504A
Module Type	Research Module
Department	Respective Department
Faculty	Dental Sciences

1. Module Summary

This module is intended to give an insight to the students on application of principles of research methodology, preparation of research project proposal, research project management, execution of research project and effective technical communication and presentation. It also emphasizes the need and the relevance of a structured approach to identify a research topic and undertake research. This module provides an opportunity for students to apply theories and techniques learnt during programme work. It involves in-depth work in the chosen area of study.

2. Module Size and Credits:

Number of Credits	18
Credit Structure (Lecture: Tutorial: Practical)	15:0:30
Total Hours of Interaction	360
Number of Weeks in a Term	52
Department Responsible	Respective Department
Total Module Marks	100
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Module Outcomes (MOs)

After the successful completion of this Module, the student will be able to:

- MO-1.** Critically review scholarly literature collected from various sources for the dissertation purpose and formulate a research problem
- MO-2.** Prepare and present a research proposal
- MO-3.** Conduct research to achieve research objectives
- MO-4.** Propose new ideas/methodologies or procedures for further improvement of the research undertaken
- MO-5.** Create research document and write research papers for publications
- MO-6.** Defend the research findings in front of scholarly audience

4. Module Contents

1. Research Methodology
2. Information search, retrieval and review
3. Project definition and project planning
4. Use of conceptual models and frameworks
5. Problem solving and Evaluation



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6. Interpretations and drawing conclusions
7. Proposing ideas or methods for further work
8. Thesis writing
9. Oral presentation
10. Authoring Research paper

5. Module Map (MO-PO-PSO Map)

MO's	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		
MO-2	3						3	3		
MO-3			3		3	3		3		3
MO-4	3	3			3		2	2		3
MO-5		3				3		3		
MO-6			3						3	2

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Module Teaching and Learning Methods

Teaching and Learning Methods		Duration in Hours
Information search, retrieval and review, Project definition and project planning	Reading Journal papers , books and other relevant materials and problem formulation	80
Use of conceptual models and Frameworks	Individual work with supervisors guidance	40
Problem solving and Evaluation	Individual work with supervisors guidance	60
Interpretations and drawing Conclusions	Individual work with supervisors guidance	40
Proposing ideas or methods for further work	Individual work with supervisors guidance	20
Presentation, Thesis/Report Writing and Viva Voce, Authoring Research paper	Presentation and Viva voce	110
	Thesis/Report writing, Authoring research paper	
Tests/Examinations/presentations		10
Total Duration in Hours		360

7. Module Assessment and Reassessment

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme



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Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

Focus of MOs on each Component or Subcomponent of Evaluation			
Component 1: CE			
Subcomponent ▶	Theory		
Subcomponent Type ▶	SC1 - Presentation	SC2 - Report	
Maximum Marks ▶	50	50	
MO-1	x	x	
MO-2	x	x	
MO-3	x	x	
MO-4	x	x	
MO-5	x	x	
MO-6	x	x	
The details of SC1, SC2, SC3 or SC4 are presented in the Programme Specifications Document.			

The Module Leader assigned to the Module, in consultation with the Head of the Department, shall provide the focus of MOs in each component of assessment in the above template at the beginning of the year. Module reassessment policies are presented in the Academic Regulations document.

8. Achieving MOs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the Module
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

9. Module Resources

Essential Reading

Relevant books, articles and electronic resources



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Module Title	Conference Presentation
Module Code	MR505A
Module Type	Research Module
Department	Respective Department
Faculty	Dental Sciences

1. Module Summary

The aim of this module is to make a student submit and present a research paper in a conference based on his/her research work during his/her programme. The student is required to carry out original research, author a conference paper and present it. The student is also required to submit the paper to a conference approved by the department and make a presentation to the examiners in the faculty.

2. Module Size and Credits:

Number of Credits	1
Credit Structure (Lecture: Tutorial: Practical)	0:0:30
Total Hours of Interaction	30
Number of Weeks in a Term	26
Department Responsible	Respective Department
Total Module Marks	100
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Module Outcomes (MOs)

After the successful completion of this Module, the student will be able to:

- MO-1.** Choose a contemporary topic in his/her area of study for research
- MO-2.** Write a conference paper based on research and present in the conference

4. Module Contents

1. Selection of topic for research
2. Critical review on the chosen topic
3. Collection of relevant data
4. Presentation and Analysis of data
5. Interpretation of data

5. Module Map (MO-PO-PSO Map)

MO's	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		
MO-2	3						3	3		

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution



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6. Module Teaching and Learning Methods

Teaching and Learning Methods		Duration in Hours
Conference Publication	Research work	10
	Authoring and Presentation of paper	5
	Presentation preparations	10
Evaluation of Report and Presentations		5
Total Duration in Hours		30

7. Module Assessment and Reassessment

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

Focus of MOs on each Component or Subcomponent of Evaluation		
Subcomponent ▶	Component 1: CE	
	Theory	
Subcomponent Type ▶	SC1 - Presentation	SC2 - Report
Maximum Marks ▶	50	50
MO-1	x	x
MO-2	x	x
The details of SC1, SC2, SC3 or SC4 are presented in the Programme Specifications Document.		

The Module Leader assigned to the Module, in consultation with the Head of the Department, shall provide the focus of MOs in each component of assessment in the above template at the beginning of the year. Module reassessment policies are presented in the Academic Regulations document.

8. Achieving MOs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the Module
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment



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4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

9. Module Resources

Essential Reading

Relevant books, articles and electronic resources

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Programme Structure and Course Details of MDS in Pediatric and Preventive Dentistry 2022

Module Title	Journal Publication
Module Code	MR506A
Module Type	Research Module
Department	Respective Department
Faculty	Dental Sciences

1. Module Summary

The aim of this module is to make a student submit a research paper to a journal based on his/her research work during the programme. The student is required to carry out original research, author a journal paper for publication. The student is also required to submit the research paper to a peer reviewed, indexed journal approved by the department and make a presentation to the examiners in the faculty

2. Module Size and Credits:

Number of Credits	1
Credit Structure (Lecture: Tutorial: Practical)	0:0:30
Total Hours of Interaction	30
Number of Weeks in a Term	26
Department Responsible	Respective Department
Total Module Marks	100
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Module Outcomes (MOs)

After the successful completion of this Module, the student will be able to:

- MO-1. Choose a contemporary topic in his/her area of study for research
- MO-2. Write a research paper based on research and publish in a journal

4. Module Contents

1. Selection of topic for research
2. Critical review on the chosen topic
3. Collection of relevant data
4. Presentation and Analysis of data
5. Interpretation of data

5. Module Map (MO-PO-PSO Map)

MO's	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		
MO-2	3						3	3		

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution



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6. Module Teaching and Learning Methods

Teaching and Learning Methods		Duration in Hours
Journal Publication	Research work	10
	Authoring and Presentation of paper	10
	Presentation preparations	5
Evaluation of Report and Presentations		5
Total Duration in Hours		30

7. Module Assessment and Reassessment

The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

Focus of MOs on each Component or Subcomponent of Evaluation		
Subcomponent ▶	Component 1: CE	
	Theory	
Subcomponent Type ▶	SC1 - Presentation	SC2 - Report
Maximum Marks ▶	50	50
MO-1	x	x
MO-2	x	x
The details of SC1, SC2, SC3 or SC4 are presented in the Programme Specifications Document.		

The Module Leader assigned to the Module, in consultation with the Head of the Department, shall provide the focus of MOs in each component of assessment in the above template at the beginning of the year. Module reassessment policies are presented in the Academic Regulations document.

8. Achieving MOs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the Module
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment



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5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

9. Module Resources

Essential Reading

Relevant books, articles and electronic resources,

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Module Title	Training in any other institution in India or Abroad
Module Code	MG501A
Module Type	Elective Module
Faculty	Dental Sciences

1. Module Summary

The aim of this module is to make a student undergo training in an area of his/her interest to develop proficiency within the faculties available in any other institution in India or abroad. The student will choose a topic for training and undergo training in a professional setup. The student should develop a report and make a presentation on his/her training undergone.

2. Module Size and Credits:

Number of Credits	3
Credit Structure (Lecture: Tutorial: Practical)	0:0:90
Total Hours of Interaction	90
Number of Weeks in a Term	26
Department Responsible	Respective Department
Total Module Marks	20
Pass Criterion	As per the Academic Regulations
Attendance Requirement	As per the Academic Regulations

3. Module Outcomes (MOs)

After the successful completion of this Module, the student will be able to:

- MO-1. Apply tools and techniques proficiently in the area of the training undergone for efficient execution of the stated objective
 MO-2. Make presentation on training obtained

4. Module Contents

Related to training programme

5. Module Map (MO-PO-PSO Map)

MO's	Programme Outcomes (POs)						Programme Specific Outcomes (PSOs)			
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PSO-1	PSO-2	PSO-3	PSO-4
MO-1	3	3					2	2		

3: Very Strong Contribution, 2: Strong Contribution, 1: Moderate Contribution

6. Module Teaching and Learning Methods

Teaching and Learning Methods	Duration in Hours
Training	Training
	Report writing
	Presentation preparation
Evaluation of Report and Presentations	10
Total Duration in Hours	90

7. Module Assessment and Reassessment



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The details of the components and subcomponents of Module assessment are presented in the Programme Specifications document pertaining to the MDS (respective specialty) Programme. The procedure to determine the final Module marks is also presented in the Programme Specifications document. The evaluation questions are set to measure the attainment of the MOs. In CE component or subcomponent of CE (SC1, SC2), MOs are assessed as illustrated in the following Table.

Focus of MOs on each Component or Subcomponent of Evaluation		
Component 1: CE		
Subcomponent ▶	Theory	
Subcomponent Type ▶	SC1 - Assessment	SC2 - Assignment
Maximum Marks ▶	10	10
MO-1	X	x

The Module Leader assigned to the Module, in consultation with the Head of the Department, shall provide the focus of MOs in each component of assessment in the above template at the beginning of the year. Module reassessment policies are presented in the Academic Regulations document.

8. Achieving MOs

The following skills are directly or indirectly imparted to the students in the following teaching and learning methods:

S. No	Curriculum and Capabilities Skills	How imparted during the Module
1.	Knowledge	Classroom lectures
2.	Understanding	Classroom lectures, Self-study
3.	Critical Skills	Assignment
4.	Analytical Skills	Assignment
5.	Problem Solving Skills	Assignment, Examination
6.	Practical Skills	Assignment
7.	Group Work	--
8.	Self-Learning	Self-study
9.	Written Communication Skills	Assignment, Examination
10.	Verbal Communication Skills	--
11.	Presentation Skills	--
12.	Behavioral Skills	--
13.	Information Management	Assignment
14.	Personal Management	--
15.	Leadership Skills	--

9. Module Resources

Relevant books, articles and electronic resources



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Annexure I - MDS in Pediatric and Preventive Dentistry
Curriculum Framework and Assessment

S. No.	Course Code	Course Title	Credits	Assessment Marks
I	Programme Specialization Teaching Course			
1	PEC501A	Preclinical and Clinical Phase Basics	48	400
2	PEC502A	Clinical Phase Intermediate	48	400
3	PEC503A	Clinical Phase Advanced	24	400
II	Research Modules			
1	MR501A	Research Methodology	2	40
2	MR502A	Short term project/Group project	6	100
3	MR503A	Library Dissertation	4	60
4	MR504A	Dissertation	10	200
5	MR505A	Conference Presentation	1	20
6	MR506A	Journal Publication	1	20
III	Faculty-Common Modules			
1	MF501A	Clinical Photography	1	20
2	MF502A	Basic and Advanced Life Support	1	20
3	MF503A	Personality Development and Soft Skills	1	20
	MF504A	Law for Dental Professionals	1	20
IV	Elective Modules			
1	MG501A	Training in any other institution in India or Abroad	3	60
2	MF505A	Teacher Training Module	1	20
V	Programme End Examination			
1	a. Part I Programme End Examination		20	700
	b. Part II Programme End Examination			
	Total		180	2500



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